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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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KATTEN MUCHIN ZAVIS ROSENMAN 525 WEST MONROE STREET CHICAGO, IL 60661-3693			EXAMINER HAM, SEUNGSOOK	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/727,691	Applicant(s) CHU, PETER F.	
	Examiner Seungsook Ham	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10-17 is/are rejected.
- 7) ☒ Claim(s) 7-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 6 and 12 are objected to because of the following informalities: "said resonator" should be corrected to --said resonator circuit--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claim 10, lines "a pair of transmission lines coupled to said capacitor, said pair of transmission lines and said capacitor forming a resonator circuit" lack enablement requirement since the disclosure does not provide how a single capacitor creates a resonant character. In order to have a resonator character, it requires both inductance and capacitance (e.g., a coaxial resonator). In figure 3, resonator circuit 74 discloses only capacitance elements (see also paragraph [0028]). Thus, one skilled in the art does not know how to make a resonator circuit with solely on capacitance elements without an inductance element.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 10 are incomplete since there is no structural connection between a tuning circuit and a resonator circuit. See MPEP § 2172.01.

In claims 7 and 13, "wherein said T connected transmission lines define free ends which are," is unclear as to what "free ends" mean.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makimoto et al. (US '238) in view of Applicant's Admitted Prior Art.

Makimoto et al. (figs. 13 and 14) discloses a band pass filter comprising: a coaxial resonator 70; a pair of transmission lines (i.e., coaxial cable) 72 coupled to the coaxial resonator and forming a resonator circuit; and a tuning circuit for tuning the resonator circuit (col. 8, lines 25-33). Makimoto et al. is silent as to whether the coaxial resonator can be made of ceramic. However, ceramic coaxial resonator is well known in the art to use in a high frequency filter device. Applicant's Admitted Prior Art also

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teaches that ceramic coaxial resonators are well known in the art (see specification, paragraph [0005]). It would have been obvious to one of ordinary skill in the art to provide a ceramic coaxial resonator in the device of Makimoto et al. since ceramic coaxial resonator is well known in the art and to obtain a high Q factor as taught by Applicant's Admitted Prior Art.

Claims 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makimoto et al. (US '238) in view of Harris (US '724, insofar as understood).

Makimoto et al. (fig. 1) discloses a band pass filter comprising: a capacitor 13b (col. 3, lines 8-16), a pair of transmission lines 14a, 14b coupled to the capacitor; the pair of transmission lines and the capacitor forming a resonator circuit. It is unclear as to whether a tuning circuit can be provided to tune the resonator circuit. However, providing a tuning circuit to tune a resonator is well known in the art. Makimoto et al. also suggests a tuning device for a coaxial resonator (col. 8, lines 25-33).

Harris (figs. 2-5) discloses a tuning circuit having a digitally controlled switched capacitor array for a coaxial resonator (col. 3, lines 29-31).

It would have been obvious to one of ordinary skill in the art to provide a switched capacitor array to the resonator circuit in the device of Makimoto et al. to tune the resonator circuit to obtain a precise changes in the frequency characteristics of the filter as taught by Harris (col. 1., lines 45-55).

Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makimoto et al. (US '238) in view of Applicant's Admitted Prior Art as applied to claim 1 above, and further in view of Harris (US '724).

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The modified device of Makimoto et al. does not show a tuning circuit comprised of a switched capacitor array.

Harris (figs. 2-5) discloses a tuning circuit having a digitally controlled switched capacitor array for a coaxial resonator (col. 3, lines 29-31).

It would have been obvious to one of ordinary skill in the art to provide a switched capacitor array to the resonator circuit in the modified device of Makimoto et al. to tune the resonator circuit to obtain a precise changes in the frequency characteristics of the filter as taught by Harris (col. 1., lines 45-55).

Allowable Subject Matter

Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Tsunoda (US '173), Ishikawa et al. (US '651), McGann (US '504) and Andoh (US Pat. Appl. Publ '521) disclose a band rejection filter having a resonator circuit including a pair of transmission lines and a coaxial resonator; and

Flaxl (US '675), Auken (US '901) and Ghadaksaz (US '121) disclose a resonator tuning circuit including a switched capacitor array.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Seungsook Ham
Primary Examiner
Art Unit 2817

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